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CLAIMS

1.   A video communications system comprising:

  a) video imaging means arranged to produce first video images representative of a first scene;

  b) communications means arranged to send information relating to said first video images and to receive information relating to second video images representative of a second scene, preferably via a network; and

  c) a video display means arranged to display video images to a user;

said system being characterised by further comprising:-

  d) image generating means arranged to generate overlay video images for display by combining respective first and second scenes of respective first and second video images such that they appear to be overlaid in substantial alignment.

2.   An system according to claim 1, and further comprising:

  image processing means arranged to process said first video images and/or said second video images according to one or more respective image processing operations, and to output processed versions of the first and/or second video images to the image generating means as input thereto;

  wherein said image processing operations are operable to process said video images such that the respective scenes of the first and second video images are separably distinguishable in the overlay image generated by the image generating means.

3.   An system according to claim 2, wherein one of the image processing operations comprises an image contrast enhancement operation.

4.   An system according to claim 3 wherein the image contrast enhancement operation comprises detecting edges within the input image to produce an edge map, applying a threshold operation to the input image to produce a thresholded image, and combining the edge map with the thresholded image to produce the processed image.

5.   An system according to any of claims 2 to 4, wherein one of the image processing operations comprises processing to render the processed image of increased opacity.

6.   An system according to any of claims 3 to 5, wherein:

     the first video images are processed according to claim 3 or 4, and the second video images are processed according to claim 5; or

     the second video images are processed according to claim 3 or 4, and the first video images are processed according to claim 5.

7.   An system according to any of claims 1 to 5, wherein the second video images are not processed by the image processing means, and the image generating means operates to overlay the respective processed first video images onto the received second video images.

8.   An system according to any of claims 1 to 5, wherein the image processing means is further operable to process the first video images twice to produce two processed versions of the first images; wherein a first processed version of each image is input to the image generation means as input thereto, and a second processed version of each image is input to the communications means for transmission thereby.

9.   An system according to claim 8, wherein different image processing operations are applied to the first video images to produce the first processed versions and the second processed versions respectively.

10.   An system according to claim 9, wherein:

     the first processed versions of the first video images are produced by processing the first video images according to claim 3 or 4, and the second processed versions of the first video images are produced by processing the first video images according to claim 5;

     or

the second processed versions of the first video images are produced by processing the first video images according to claim 3 or 4, and the first processed versions of the first video images are produced by processing the first video images according to claim 5.

11.   An system according to any of the preceding claims, wherein the first scene includes the first user's head, and/or the second scene includes a second user's head.

12.   An system according to any of the preceding claims wherein the video imaging means comprises virtual reality processing means, arranged to generate video images of an avatar of the user for use as the first video images.

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13.   A video communications method comprising the steps of:
           a) producing first video images representative of a first scene;
           b) sending information relating to said first video images and receiving information relating to second video images representative of a second
10   scene, preferably via a network; and
           c) displaying video images to a user;
       said method being characterised by further comprising:-
           d) generating overlay video images for display by combining respective first and second scenes of respective first and second video images such that they appear
15   overlaid in substantial alignment.

14.   A method according to claim 13, and further comprising:
       processing said first video images and/or said second video images according to one or more respective image processing operations, and using processed versions of the
20   first and/or second video images to the generating step as input thereto;
           wherein said image processing operations are operable to process said video images such that the respective scenes of the first and second video images are separably distinguishable in the overlay image generated by the generating step.

25   15.   A method according to claim 14, wherein one of the image processing operations comprises an image contrast enhancement operation.

16.   A method according to claim 15 wherein the image contrast enhancement operation comprises detecting edges within the input image to produce an edge map,
30   applying a threshold operation to the input image to produce a thresholded image, and combining the edge map with the thresholded image to produce the processed image.

17.   A method according to any of claims 14 to 16, wherein one of the image processing operations comprises processing to render the processed image of increased
35   opacity.

18.   A method according to any of claims 15 to 17, wherein:

        the first video images are processed according to claim 15 or 16, and the
second video images are processed according to claim 17; or

        the second video images are processed according to claim 15 or 16, and
the first video images are processed according to claim 17.

19.   A method according to any of claims 13 to 17, wherein the second video images
are not processed by the image processing step, and the generating step operates to
overlay the respective processed first video images onto the received second video
images.

20.   A method according to any of claims 13 to 17, wherein the image processing step
further includes processing the first video images twice to produce two processed
versions of the first images; wherein a first processed version of each image is used by
the generation step as input thereto, and a second processed version of each image is
sent to a second terminal, preferably by the network.

21.   A method according to claim 20, wherein different image processing operations
are applied to the first video images to produce the first processed versions and the
second processed versions respectively.

22.   A method according to claim 21, wherein:

        the first processed versions of the first video images are produced by
processing the first video images according to claim 15 or 16, and the second
processed versions of the first video images are produced by processing the first
video images according to claim 17;

            or

        the second processed versions of the first video images are produced by
processing the first video images according to claim 15 or 16, and the first
processed versions of the first video images are produced by processing the first
video images according to claim 17.

23.   A method according to any of claims 13 to 22, wherein the first scene includes
the first user's head, and/or the second scene includes a second user's head.

24.   A method according to any of claims 13 to 23 wherein the producing step further comprises a virtual reality processing step to generate video images of an avatar of the user for use as the first video images.

5   25. A system according to any of claims 2 to 12, the system further comprising quality measurement means for determining a measure of at least one characteristic indicative of image quality for the first video images, the image generating means being responsive to an indication of the measured quality, such that at least one visible characteristic of the overlay images of the first scene is dependent on the image quality of

10   the first video images.

26. A system according to claim 25, wherein the degree to which the overlay images relating to the first scene are opaque is dependent on the image quality of the first video images.

15   27. A computer program or suite of programs arranged such that when executed by a computer or collectively by a plurality of computers it/they cause the computer or computers to perform the method of any of claims 13 to 24.

28. A computer readable storage medium storing a computer program or any one or

20   more of a suite of computer programs according to claim 27.

29. A method according to any of claims 13 to 24, including the further step of evaluating the quality of the first video images, wherein a visible characteristic of the first scene in the generated overlay video images is chosen in dependence on the evaluated quality of the first video image.

25   30. A method according to claim 29, wherein the visible characteristic is the degree of transparency or visibility of the first scene in the overlay image.

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